same direction by electro-chemical equivalents of hydrogen, lead, copper,, and tin., at *e, h, k,* and *m.*

700. If the present paper be accepted as a correct expression of facts, it will still only prove a confirmation of certain general views put forth by Sir Humphry Davy in his Bakerian Lecture for i8o6/ and revised and re-stated by him in another Bakerian Lecture, on electrical and chemical changes, for the year i826.[2] His general statement is, that " *chemical and, electrical attractions were produced by the same cause, acting in one case on particles, in the other on masses, of matter ; and that the same property, under different modifications, was the cause of all the phenomena exhibited by different voltaic combinations*"[3] This statement I believe to be true; but in admitting and supporting it, I must guard myself from being supposed to assent to all that is associated with it in the two papers referred to, or as admitting the experiments which are there quoted as decided proofs of the truth of the principle. Had I thought them so, there would have been no occasion for this investigation. It may be supposed by some that I ought to go through these papers, distinguishing what I admit from what I reject, and giving good experimental or philosophical reasons for the judgment in both cases. But then I should be equally bound to review, for the same purpose, all that has been written both for and against the necessity of metallic contact,—for and against the origin of voltaic electricity in chemical action,—a duty which I may not undertake in the present paper.[4]

### ^f ii. *On the Intensity necessary for Electrolysation*

701. It became requisite, for the comprehension of many of the conditions attending voltaic action, to determine positively, if possible, whether ejectrolytes could resist the action of an electric current when beneath a certain intensity? whether

[1] *Philosophical Transactions,* 1807. [2] *Ibid.* 1826, p. 383.
[3] *Ibid.* 1826, p. 389.
[4] I at one time intended to introduce here, in the form of a note, a table of reference to the papers of the different philosophers who have referred the origin of the electricity in the voltaic pile to contact, or to chemical

action, or to both; but on the publication of the first volume of M.
Becquerel's highly important and valuable *Traite de VElectricite et du Magnetism,* I thought it far better to refer to that work for these references,
and the views held by the authors quoted. See pages 86, 91, 104, no, 112, 117, 118, 120, 151, 152, 224, 227, 228, 232/233, 252, 255, 257, 258, 290, etc.—July 3, 1834.